



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,239	02/26/2002	Takatoshi Kinoshita	500.38277CV3	5853
20457	7590	10/14/2003	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			BOYKIN, TERRESA M	
		ART UNIT		PAPER NUMBER
		1711		

DATE MAILED: 10/14/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Offic Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/082,239	KINOSHITA ET AL. <i>[Signature]</i>
	<b>Examiner</b>	<b>Art Unit</b>
	Terressa M. Boykin	1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days; a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 20 May 2002.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a)  The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

\*Note that all responses to this action should be sent to Art Unit 1711.

**Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102( b) as being anticipated by Oshino et al. see abstract, col. 2 line 63 through col. 3 line 4, col. 4 line 59 through col. 5 line 27, col. 6 line 64 col. 7 line 27 and example 1 lines 46 and 51; or Kuze et al. see abstract, col. 2 line 14, col. 3 line 17, col. 8 lines 60 through col. 9 line 3 and Table 1.

**USP 5498688** discloses a process for the preparation of a (co)polycarbonate having an excellent hue, heat resistance, residence to hydrolysis and impact resistance by transesterification with the use of an apparatuses as discussed therein. In the *first* step, a dihydroxy compound is reacted with a *carbonic diester* in a reactor having a surface area contacting the dihydroxy compound and the *carbonic diester*, a made of a material

containing iron in an amount of 20% by weight or less, to give a prepolymer and, in the second step, melt-polycondensing the prepolymer in a reactor other than the reactor used in the *first* step.

In col. 4 the reference discloses that The *first* step, i.e., the *first* polycondensation step, in the present invention is one for conducting the early stage reaction of polymerization in the process for preparing a (co)polycarbonate by melt-polycondensing a dihydroxy compound with a *carbonic diester* in the presence of a transesterification catalyst. The prepolymer finally obtained in this step has an *intrinsic* viscosity number of 0.1 to 0.4 dl/g. The prepolymer obtained in this step may contain a monohydric compound, e.g., phenol, in an amount of 10 ppm or above, preferably from 10 to 10,000 ppm, still preferably from 10 to 1,000 ppm and most preferably from 10 to 100 ppm. The prepolymer obtained in this step is subjected to the *second* polycondensation step. When a *second* reactor having a surface area, contacting the prepolymer, made of a material containing iron in an amount of above 20% by weight, is used and the prepolymer obtained in the *first* step contains a monohydric compound in an amount of exceeding 10,000 ppm, the (co)polycarbonate which will be obtained may be remarkably discolored. Note in col. 6 line 60 that the reference states that in the *first* step, a dihydroxy compound and a *carbonic diester* are fed into the *first* reactor, and then, a catalyst is added into the reactor to initiate transesterification. The reaction temperature of the *first* step may *range* generally from 60.degree. to about 300.degree. C., preferably from 130.degree. to 280.degree. C. which anticipates applicants' claimed range.

The *second* polycondensation step is one for the later-stage reaction of polymerization wherein transesterification is conducted subsequent to the *first* polycondensation step. The polymer, i.e., (co)polycarbonate, finally obtained in this step has an *intrinsic*

viscosity number of 0.3 to 1.0 dl/g. The *intrinsic* viscosity number [ $\eta_{sp}$ ] of the (co)polycarbonate is generally at least 0.15 dl/g higher than that of the prepolymer obtained in the *first* step. When the *second* reactor has a surface area contacting the prepolymer and the (co)polycarbonate made of a material containing iron in an amount of above 20% by weight, the (co)polycarbonate obtained in this step must have a monohydric compound concentration of 10,000 ppm or below. Also, in col. 7 line 14, in the *second* step, the reaction temperature of the *second* step may range from 200.degree. to about 310.degree. C., preferably from 220.degree. to 300.degree. C which again as noted above, is anticipated by applicants' claimed invention. Note in Example 1 of the reference that the reaction is fully stirred.

**USP 5459225** discloses a process for producing a polycarbonate, which comprises transesterifying, in the presence of an antioxidant, (A) a dihydroxy compound or a precursor thereof and (B) a carbonic acid diester having, as an impurity, a chlorine content derived from chloroformate group of at most 30 ppm, which is determined by subtracting the chlorine content extracted with water using ion chromatography from the total chlorine content contained in said carbonic acid diester determined by potentiometric titration. In the present invention, as the reaction proceeds, phenols and alcohols corresponding to the carbonic compound used or esters thereof and inactive solvents are also released from the reactor. These products can be recycled through separation and purification, and it is preferable to install an equipment for recovering the aforesaid compounds. The reaction can be performed batchwise or *continuously*, and in any equipment. When the reaction is performed in continuous system, at least two reactors should be used to provide the above-described reaction conditions. Note also Table 1.

In view of the above, there appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). In claims 1 and 2, applicants have not specified that the apparatus does not contain therein a center agitation shaft. Further, with regard to claims 3 and 4, applicants have not specified the liquid viscosity range from 1 PaS to 1,000 PaS which appears to be the crux of the invention. Additionally, as noted above with regard to claims 1 and 2, claims 3 and 4 do not state whether or not a center agitation shaft present, which again, appears to be one of the more important aspects of applicants claimed invention. Further, with regard to the viscosities, the disclosed viscosities may or may not be distinct from applicants liquid viscosity range, and thus it is necessary that applicants distinguish between the two. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### Correspondence

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Terressa Boykin, via the receptionist whose telephone number is (703) 308-2351. The examiner can normally be reached on Monday through Friday from 8:00a.m.-5:30 p.m.

tmb



Examiner Terressa Boykin  
Primary Examiner